Healthy Homes

for

Rich and Poor.

1880.

Prof. CHAS. F. CHANDLER, President of the N. Y. Board of Health, writes:

"Permit me to take this opportunity to express my gratification at the intelligent and judicious discussions of sanitary subjects which appear in your paper, and to wish you every success in your efforts to direct the attention of the public to the sanitary defects of our surroundings and the best methods for their improvement."

The Nation says:

"Architects, landlords and tenants, to mention no others, should find their account in more or less constant acquaintance with its contents."

JAMES PARTON writes:

"I hardly know a periodical more certain to be useful. Every day makes it clearer that until physical conditions are right, nothing relating to our life can be right."

GEO. W. CURTIS says in *Harper's Weekly*:

"The excellent paper published in this city, and called *The Plumber and Sanitary Engineer*, might add to its other titles that of the Practical Philanthropist, for such it proves itself to be in its constant and clear exposure of the wrongs and dangers of many of our domestic and municipal arrangements."

BALDWIN LATHAM, the eminent English engineer, author of "*Sanitary Engineering*," writes:

"I read with considerable interest, from time to time, the very useful and practical remarks which appear in your journal. I hope and trust that the information thus conveyed to the public may not only be read but acted upon, for I feel confident, if due attention is given to the advice offered in the pages of your journal, that much sickness and suffering will be prevented."

Dr. CHAS. F. FOLSOM, Sec'y Mass. State Board of Health, writes:

"Your efforts to improve the condition of tenement houses in New York have been attended with such admirable results that I am exceedingly glad to see a notice of a proposition on your part to offer prizes for the best plans for Model School Houses, which cannot fail to call attention in a striking way to the vast difference between an easily attainable standard and the deplorable condition of many of your schools in New York. You have money enough in your city, and intelligence and public spirit. All that is needed is to show your citizens the marked contrast between what your schools are and what they ought to be, in order to make them of surpassing excellence, and models to the whole country."

Healthy Homes

for

Rich and Poor.

Public health is public wealth.—Dr. RICHARDSON.

Sanitary reform is the question of the hour.—VIRCHOW.

An ounce of prevention is better than a pound of cure.—Dr. FRANKLIN.

The care of the public health is the highest duty of the Statesman.—GLADSTONE.

The prevention of disease is a higher and more useful branch of medicine than therapeutics.—AUSTIN FLINT, M. D.

1880.

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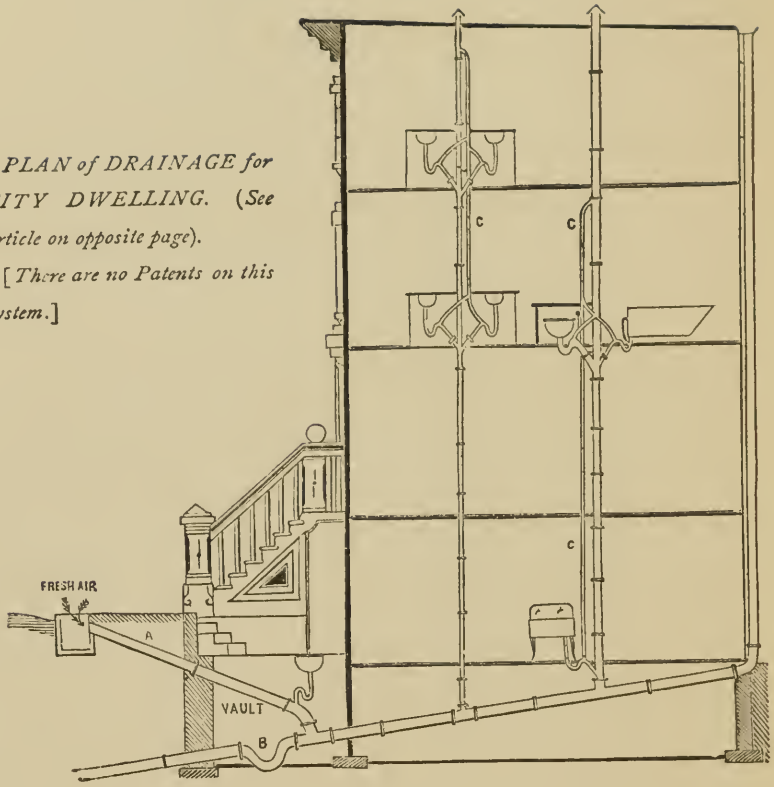
140 William Street, New York.

PLAN of DRAINAGE for CITY DWELLING. (*See article on opposite page*).

[*There are no Patents on this system.*]



Requirements

for the

Drainage of Every House.

[*From* THE SANITARY ENGINEER, *Sept.* 1*st*, 1879.]

In the light of present knowledge, the following seems to us the essential requirements for the drainage of every house. Time and further experience may suggest other features or modifications of these. *We invite our read rs to criticize or ask for more detailed explanation of any section not fully understood or concurred in :*

A trap (B) *should be placed on every main drain* TO DISCONNECT *the house from the sewer or cesspool.*

* Every main drain should have an inlet (A) for fresh air, entering at a point inside the main trap, and carried to a convenient location *out-of-doors*, not too near windows. In places liable to unusual pressure from the sewer there should be two traps, with a vent pipe from between them, running up full size above the roof ; or, where the pressure from sewer is only occasional and the rigor of climate will permit, this vent may

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* This inlet will relieve the smaller house traps from pressure occasioned by a descending column of water that would otherwise be likely to force the seals of these traps. The air drawn through this inlet to the lower part of the drainage system assists the circulation within the drains, and is essential to ensure the diffusion of the gases generated within them.

be carried to the sidewalk or area, at a safe distance from windows. If the first trap is forced, the gas can gain easier exit through this pipe than through the second trap.

Every vertical soil or waste pipe should be extended at least full size through the roof.

No traps should be placed at the foot of vertical soil pipes to impede circulation.

Traps should be placed under all sinks, basins, baths, wash trays, water closets, etc., and as near to these fixtures as practicable.

* All traps under fixtures, wherever practicable, should be separately ventilated in order to guard against syphonage. Such vent pipes should not branch into a soil pipe below where any drainage enters it. In some cases it is preferable to carry it to outer air independently.

Rain water leaders should not be used as soil pipes, and when connected with house drains they should be made of cast iron in preference to galvanized sheet iron or tin, there being less liability of corrosion. Joints should be gas and water-tight, to preclude possibility of drain air entering open windows.

No safe waste should connect with any drain, but it should be carried down independently to a point where its discharge would indicate the existence of a leak or any overflow above.

No waste from a refrigerator should be connected with a drain.

Unless the water supply is ample, so that it will rise to

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* The extension of soil pipe full size through the roof is not a certain protection against syphonage of traps branching into it, and no protection when traps are on a horizontal pipe a distance from the vertical soil pipe.

every part of a building, ensuring at all times the proper flushing of fixtures and traps, a cistern should be provided into which the water will rise at night, or into which it may be pumped. Said cistern should be large enough to hold an ample daily supply, be kept clean, covered, and properly ventilated. The overflow pipe from it should *never* be run into any drain *under any circumstances*. The supply for drinking-water should not be drawn from it, but from a direct supply, *i. e.*, direct from the street main.

Water closets should not be supplied directly from street pressure or by a pipe from which branches are taken for drinking-water. Where the valve closets are preferred to those that are supplied from a small cistern immediately over them, then the supply should be taken to a storage tank, from which it can be conveyed to the valves on the closets, thereby ensuring an equable pressure and securing more reliability in their working.

All drain pipes within a house should be of *metal* in preference to stoneware, owing to the liability of the latter to crack, and the difficulty of keeping the joints tight. It is best to run them along the cellar wall or ceiling with a good incline. They should *never* be hidden underground, as then leaks will not be perceptible. In some places it is common to paint pipes white, so that any leakage will show itself to the most careless observer.

All drains should be kept at all times free from deposit; and if this cannot be effected without flushing, special flushing arrangements should be provided, so as to effectually remove all foul matter from the house drains to the public sewers.

All horizontal drains should be laid in a straight line, with proper falls, and should be carefully jointed and made water-

tight. No right-angled junction should be allowed, except in the case of a drain discharging into a vertical shaft.

No drain should be constructed so as to pass under a dwelling house, except where absolutely necessary; and then it should be constructed of cast iron pipes, with lead caulked joints laid so as to be readily accessible for inspection, and ventilated at each end.

Whenever dampness of site exists, it should be remedied by laying sub-soil drains, which should not pass directly to the sewer.

Water supply and waste pipes should be concentrated as much as possible, and not scattered about a building. Horizontal soil and waste pipes are objectionable.

Plumbing fixtures should not be hidden behind walls and partitions where their condition is never apparent. They ought properly to be open to view and so situated that any leak would be readily detected. It is also well to have a plan of the plumbing of each house for the tenants' or owner's convenience and guidance in any emergency.

In planning house drains they should be got outside the walls of the house as quickly as possible, so that there may be few joints of pipe, and the smallest chance of leakage from defects or accidents; taking proper precautions in locating to guard against freezing.

Tenement House Reform.

History of the Competition for a Model House for Workingmen, and its Results.

1878–9.

In the month of December, 1878, the proprietors of THE SANITARY ENGINEER united with Messrs. D. Willis James, F. B. Thurber, Henry E. Pellew, and Robert Gordon, in offering $500 as a premium for the best four designs for a house for workingmen, in which might be secured a proper distribution of light and pure air, with an arrangement of rooms that would yield a rental sufficient to pay a fair interest on the investment.

The following prominent gentlemen comprised the committee of award: the late R. G. Hatfield, architect; Prof. Chas. F. Chandler, President Board of Health; Rev. John Hall, D. D.; Rev. Henry C. Potter, D. D., and Robert Hoe, Esq. The competition was limited to a building on an ordinary city lot, 25 x 100. As was then stated, the problem of building on a large block had been solved by Mr. Alfred T. White, in Brooklyn; but it was hoped that the ingenuity of architects might devise a plan by which the single lot owner could profitably build a sanitary apartment house. In that case competition between owners of tenements would be an important element in solving this difficult New York problem.

The division of building sites here into lots 25 x 100 is an unfortunate one, and the hope was expressed that in laying out new sections or changing old ones, a different division might be adopted. It was further urged that "to be permanently successful, the building of houses for the poor must not be undertaken as an act of charity, but as a business operation."

The announcement of the competition was widely commented on by the press, and drew general attention. Indeed, the interest manifested and results obtained were surprising. No less than 190 architects in all parts of the United States, Canada and even Great Britain sent in designs, many of them of great excellence. These were placed on free exhibition at Leavitt's Art Rooms, Clinton Hall, and attracted numerous visitors, including not only philanthropically inclined persons, but many house owners, builders, and other practical men, who carefully studied the plans and noted all features capable of immediate application. One positive result of the competition was its good influence upon architects, builders, and the public generally, in showing the need of giving more thought to sanitary construction. Elaborate descriptions of the designs appeared in the leading journals, and helped to enlighten the public regarding the defects of existing tenements.

The exhibition closed February 15th, and the awards of the committee were announced in the issue of THE SANITARY ENGINEER for March 1st. The ten plans selected by the committee for approval were published in this and succeeding issues of this journal.

The conclusion was irresistibly impressed upon the committee that, while most of the designs were a vast improvement over existing tenement houses, yet they did not solve the prob-

lem of reforming the condition of the poor. While the plans selected for approval came nearest to fulfilling the terms of the competition, the committee emphatically declared that in their view it was impossible to secure the requirements of physical and moral health within the narrow and arbitrary limits of the ordinary city lot. They therefore recommended further agitation to secure needed legislation, regulating the number of occupants, the amount of open space, the provisions for light, ventilation and cleanliness, on sound sanitary principles.

As a result of the public interest aroused by the competition and the joint action of a committee of the State Charities Aid Association in interesting the clergy of the city and in holding public meetings in the churches and at Cooper Institute to discuss the need of reform, an amendment to the Tenement House Act was passed by the State Legislature, May, 1879, limiting the space to be occupied by any tenement house to *sixty-five per cent.* of the lot it occupies, requiring all bedrooms to have windows, with direct light and air, and greatly adding to the powers of the Board of Health to remedy abuses in such buildings. Two associations were also formed to erect model dwellings for workingmen, and several improved tenements have already been put up by private parties. A vast improvement has also taken place in the character of the plans for new tenements submitted to the Building Department, and all plans which fail to meet the requirements of the law have been rejected.

Thus we may sum up the results of the Tenement House reform movement which was initiated by THE SANITARY ENGINEER as follows :

I. Public interest has been awakened and stimulated.

II. Important legislation has been secured.

III. Owners and builders of tenements have been shown how to plan them to the best advantage.

IV. Several organizations have been formed to erect Model Houses.

V. The health authorities have been induced to enforce the laws more stringently, and to undertake a thorough inspection of all the tenements in the city.

It is to be hoped, and it seems probable, that no less valuable results will follow from the $500 Competition for a Model School House, which THE SANITARY ENGINEER has announced, with the following gentlemen as the Committee of Award :

Mr. GEO. B. POST, Architect, New York City.

JOHN S. BILLINGS, Surgeon U. S. Army ; Vice-President National Board of Health, Washington, D. C.

Hon. JOHN D. PHILBRICK, late U. S. Commissioner of Education at Vienna and Paris Exhibitions, Boston, Mass.

WM. R. WARE, Professor of Architecture, Massachusetts Institute of Technology, Boston, Mass.

C. R. AGNEW, M. D., New York City.

$500 COMPETITION

FOR A

Model Public School House.

EXTRACT FROM TERMS OF COMPETITION.

[*Printed in full in Nov. 1st issue of* The Sanitary Engineer.]

The designs are to be for a Public School Building to accommodate eight hundred pupils (400 boys and 400 girls), from six to fifteen years of age.

The building is to be erected on a lot fronting north, of 100 feet front by 100 feet deep, and enclosed by buildings on adjoining lots at the sides and rear (of average city height, say four stories.) It is to be constructed of brick, with floors of timber, and to have fire-proof stair-cases.

Provision is to be made for *one* Exhibition or Assembly Room, to have seating capacity for the whole school, independent of platform space. Also for a Master's or Principal's room, occupying not less than 150 square feet, and for a Retiring Room for female teachers, occupying not less than 150 square feet.

There are to be separate entrances and class-rooms for each sex. Each Class-room is to accommodate from 54 to 56 scholars, and each scholar is to have a separate desk. The position of Teacher's desk is to be shown on plans; also the direction in which the scholars face. No provision is to be made for janitor's family in the school building.

The features which will have weight with the Committee of Award, to whom the designs will be submitted will be—

1. Convenience of arrangement for school purposes.
2. Security against fire and facility for egress.
3. Distribution of light.
4. Ventilation and heating.
5. Drainage and other sanitary appointments.

The time for competition is limited to the 2d of February, 1880. Designs arriving after two o'clock P. M. of that date will not be admitted into the competition.

The Committee of Award will consist of

Mr. Geo. B. Post, Architect, New York.

John S Billings. Surgeon U. S. Army; Vice-President National Board of Health, Washington, D. C.

Hon. John D. Philbrick. LL.D., late U. S. Commissioner of Education at Vienna and Paris Exhibitions, Boston, Mass.

Wm. R. Ware, Professor of Architecture, Massachusetts Institute of Technology, Boston, Mass.

C. R. Agnew, M. D., New York.

The designs will all be placed on public exhibition at a place to be hereafter designated, from February 4th to 12th.

To the author of the design "No. 1," will be paid $250; to the author of design "No. 2," will be paid $125; to the author of design "No. 3," will be paid $75; and to the author of design "No. 4," will be paid $50. The numbered designs will all be published in The Sanitary Engineer.

To the Thoughtful Reader.

Every man of education should be interested in sanitary science.

Every good citizen ought to care for questions of public health.

Lastly, every householder and man of family should be concerned about the health of those around him.

All these subjects are fully discussed in THE SANITARY ENGINEER, not in a superficial and temporary way, but by the most competent writers—all experts in the several departments of drainage, heating, lighting, ventilation, public and personal hygiene, which this journal treats.

> Among its regular contributors Col. GEO. E. WARING, Jr., of Newport, and EDW. S. PHILBRICK, C. E., of Boston, write upon sanitary engineering subjects; Prof. HENRY MORTON, President of Stevens Institute, treats topics connected with chemistry, and during the past year has very fully discussed the Electric Light, Water Gas, and Food Adulteration; ROBERT BRIGGS, C. E., of Philadelphia, and Dr. JOHN S. BILLINGS, U. S. A., Vice-President of the National Board of Health, have in charge subjects connected with ventilation and heating; "School Hygiene" is the specialty of Dr. D. F. LINCOLN, of Boston, and Hon. JOHN D. PHILBRICK, LL.D., U. S. Commissioner at Vienna and Paris Exhibitions. Tenement House Reform has been written on by CHAS. L. BRACE, and others. In a like manner other topics have been treated by competent men.

A journal which thus aims to discuss all subjects accurately and impartially could hardly expect a rapid growth or sudden appreciation. But as fast as it gains readers it holds them. Although but two years old, it is now established on a firm financial basis, *every issue paying a profit to its proprietors.* Its success is unprecedented.

THE SANITARY ENGINEER has materially aided in bringing about several important reforms. It has caused the public to appreciate the value of modern improvements and the need of having good drainage. The TENEMENT HOUSE AGITATION was largely due to its Competition for a MODEL HOUSE FOR WORKINGMEN. Its presentation of the FOOD ADULTERATION question, and the ELECTRIC LIGHT problem, led to important practical results, by correcting the erroneous impression caused by sensational and unwarranted statements. It is now agitating in favor of MODEL SCHOOL HOUSES, with the prospect of immediate benefit.

In thus stating its aim and history, it is designed to familiarize the public with the work it is doing, as a legitimate means of drawing attention.

Every one is invited to examine its pages to judge of its merits.

Its main support hitherto has been derived from the class who are professionally or commercially interested in its columns. But it deserves and is steadily gaining a popular circulation, due to the growing interest in public and personal hygiene. It already has paid subscribers in thirty States and Territories of the Union, as well as in Canada, Mexico, England, Ireland, Scotland, France, Belgium, Germany, Austria, Russia, Switzerland, Denmark, India, Japan, Australia, New Zealand, and the Sandwich Islands.

Questions are solicited from persons seeking information on any of the subjects treated by this journal, and will be answered through its columns, WITHOUT CHARGE, *when they are of general interest.*

Disinfection vs. Cleanliness.

[*Extract from* Edw. S. Philbrick's *series of articles, entitled "Domestic Sanitation," in the October 1st issue of* The Sanitary Engineer.]

In the use of disinfectants or deodorizers, we should never be allowed to forget the more important need of cleanliness. It is a vastly better and more efficient way to *remove* the cause of trouble rather than to attempt to control its action by an antidote.

It was the style one or two centuries ago for ladies and gentlemen to use perfumes in great abundance on the person as an antidote to conceal the emanations, which were, in a more advanced state of civilization, found to be readily avoided by a more frequent change of underclothing. The costliness of linen and the entire absence of cotton cloth in those days rendered it comparatively difficult for any but the more wealthy to indulge in these frequent changes which are now thought so necessary to comfort and health. It was for this reason that Beau Brummel and his contemporaries had recourse to perfumery where we now use the laundry. It would be a great mistake and a retrograde in civilization to suppose that any application of chemicals could compensate for the lack of hot water and soap all about the insides of our houses, at frequent intervals, or the frequent exposure of our apartments to sunshine and fresh air.

A Word to Insurance Officers.

[*From* THE SANITARY ENGINEER *of May 1st*, 1879.]

Instead of merely hammering at a man's chest to find if he has a tendency to any disease, would it not be well for the medical examiners of life insurance companies to inquire if he has a cesspool leaking into his well, or untrapped pipes beneath his basins and closets?

More persons die of zymotic diseases in New York than from almost any other malady, yet a man living in the midst of contagious influences, and hence daily liable to take diphtheria or typhoid fever, would find little trouble in getting a heavy policy on his life.

If insurance officers would give this subject their attention they might save many losses to their companies, and also benefit the public generally; for if men found that their homes were rated as "hazardous," they would soon begin to think of finding a remedy for the difficulty.

The Editor of THE SANITARY ENGINEER *solicits Questions from persons seeking information on any of the subjects treated by that journal, which will be answered through its columns,* WITHOUT CHARGE, *when they are of general interest. Enquiries of this kind from ladies will receive prompt attention.*